INDEX FOR VOLUME 13

Adams, Lowell, Mitchell G. Hanavan, Neil W. Hosley, and David W. Johnston. The effects on fish, birds, and mammals of DDT used in the control of forest insects in Idaho and Wyoming, 245–254.
Aerial photography
  negative photographs, 227
  scanning device, 226
Age determination
  deer, white-tailed, 195
  geese, Canada, 177
  rabbits, cottontail, 216
Aldrich, John W., see Goodrum, Phil, 1
Alligator, management, 16
Antelope, predation, 313
Ayers, John C. Book review, 424

Bailey, R. Wayne, see Glover, Fred A., 255
Baldwin, W. P., see Goodrum, Phil, 1
Banfield, A. W. F. An irruption of elk in Riding Mountain National Park, Manitoba, 127–134
Bardach, John E., see Hasler, Arthur D., 40
Beaver
  lung fungus, 419
  placental scars, 412
  productivity, 412
Bennett, George W. Book review, 319
Big game, management, 392
Bird banding
  at Bear River Refuge, 359
  pheasants, 286
Birds, effect of DDT on, 245
Bone development, in cottontails, 216

Carlson, C. Edward, see Erickson, Arnold B., 188
Carotene, in wildlife foods, 271
Census
  pheasant, 101
  strip method, 145
  summer methods in Georgia, 415
Childs, Vandiver L., see Giles, LeRoy W., 16
Clark, Wilson F. Book review, 425
Clothier, Ronald, see Ingles, Lloyd G., 311
Coots, American, competition with shoal-water ducks for food, 423
Cottam, Clarence. Further needs in wildlife research, 333–341
Cottontail
  age determination, 216
  bone growth, 216
  food habits of, 295
Craighead, Frank C., Jr., and John J. Craighead. Nesting Canada geese on the Upper Snake River, 51–64
Craighead, John J., see Craighead, Frank C., Jr., 51
Crawford, Louis, A., see Ingles, Lloyd G., 311
Cypert, Eugene. The effect of shading upon seed production of the trailing lespedeza, 142

DDT
  effects on fish and wildlife, 1, 11, 245, 316, 415
Deer
  browsing, 135, 417
  mule, effects on range in Utah, 421
  white-tailed, age determination, 195
    tooth development, 195
Delacour, J. Obituary of Paul Rode, 234
Derby, James V., Jr., see Nestler, Ralph B., 265 and 271
DeWitt, James B., see Nestler, Ralph B., 265 and 271
Duck, black, food habits of, 64
Ducks, shoal-water, competition with coots for food, 423
Dusi, Julian L. Methods for the determination of food habits by plant microtechniques and histology and their application to cottontail rabbit food habits, 295–298

Elk, irruption of in Manitoba, 127
Erickson, Arnold B., P. R. Highby, and C. Edward Carlson. Ruffed grouse populations in Minnesota in relation to blood and intestinal parasitism, 188–194.
Erickson, Arnold B. The fungus (*Haplosporangium parvum*) in the lungs of the beaver (*Castor canadensis*), 419–420
Fishes
  calculating size of, 298
  chain pickerel, 377
  effects of DDT on, 245, 316
  effects of fin removal, 29
  pike, 157
  walleye, 157
Food
  competition between American coot and

shoal-water ducks, 423
deer, 135, 314, 417
rabbit, 135
vitamin content, 271
wild turkey, 255
Food habits
black duck, 64
cottontail rabbits, 295
Forage
deer, in Utah, 314
winter, 135
Foxes
trapping and tagging, 309
Fungus, in beaver lungs, 419

Game birds, marker for, 228
Gashwiler, Jay S. The effect of spring muskrat trapping on waterfowl in Maine, 183–188
Geese, Canada, age determination, 177
Giles, LeRoy W. and Vandiver L. Childs. Alligator management on the Sabine National Wildlife Refuge, 16–28
Glover, Fred A. and R. Wayne Bailey. Wild turkey foods in West Virginia, 255–265
Goodrum, Phil, W. P. Baldwin and John W. Aldrich. Effect of DDT on animal life of Bull's Island, South Carolina, 1–10
Goose, Canada, nesting, 51
Gopher, pocket, populations, 311
Grouse, ruffed, populations and parasitism, 188

Hale, James B. Aging cottontail rabbits by bone growth, 216–225
Halloran, Arthur F. and Cecil A. Kennedy. Bighorn-deer food relationships in southern New Mexico, 417–419
Hanavan, Mitchell G., see Adams, Lowell, 245
Hanson, Harold C. Methods of determining age in Canada geese and other waterfowl, 177–183
Hasler, Arthur D. and John E. Bardach. Daily migrations of perch in Lake Mendota, Wisconsin, 40–51
Hayne, Don W. An examination of the strip census method for estimating animal populations, 145–157
Hendrickson, G. O., see Trump, Richard F., 227
Herald, Earl S. Notes on the effect of aircraft distributed DDT-oil spray upon certain Philippine fishes, 316–318
Highby, P. R., see Erickson, Arnold B., 188
Hodgdon, Kenneth W. Productivity data from placental scars in beavers, 412–414
Hosley, Neil W., see Adams, Lowell, 245
Hough, A. F. Deer and rabbit browsing and available winter forage in Allegheny hardwood forests, 135–141
Hunter, Gilbert N. and Lee E. Yeager. Big game management in Colorado, 392–411

Ingles, Lloyd G., Ronald Clothier, and Louis A. Crawford. Methods of estimating pocket gopher populations, 311–312

Janson, Reuel G., see Nelson, Bernard A., 308
Johnston, David W., see Adams, Lowell, 245

Kabat, Cyril, see Thompson, Donald R., 231
Kalmbach, E. R. A scanning device useful in wildlife work, 226–227
Kimball, James W. The crowing count pheasant census, 101–120
Kozicky, E. L., see MacNamara, L. G., 286

Lay, George Balch (Obituary), 428
Leedy, Daniel L. Ohio pheasant nesting surveys based on farmer interviews, 274–285
Leonard, Justin W. Research Man Vs. Administrator—The Research Man's Viewpoint, 237–244
Lespedeza, trailing, seed production, 142
Livestock, effects on range in Utah, 421

MacNamara, L. G. and E. L. Kozicky. Band returns from male ring-necked pheasants in New Jersey, 286–294
Mammals, effects of DDT on, 245
McAtee, W. L. Obituary of George Balch Lay, 428
McClure, H. Elliott. The eyeworm, *Oxyspirura petrowi*, in Nebraska pheasants, 304–307
Microtechniques and histology, application to cottontail food habits, 295
Mills, Harlow B. Notes, 141, 235
Mendall, Howard L. Food habits in relation to black duck management in Maine, 64–101
Moose, courting behavior, 313
Muskrat trapping, effect on waterfowl, 183

Nelson, Bernard A. and Reuel G. Janson. Starvation of pheasants in South Dakota, 308–309
Nestler, Ralph B. Acceptance of seeds of four legumes by the bobwhite quail, 143–144
Nutrition of bobwhite quail, 342–358
Salt (sodium chloride) requirements of growing bobwhite quail, 121–123
Supplements to yellow corn for winter-maintenance and subsequent reproduction of quail, 123–126
Nestler, Ralph B., James V. Derby, Jr., and James B. DeWitt. Vitamin A and carotene content of some wildlife foods, 271–274
Nestler, Ralph B., James B. DeWitt, and J. V. Derby, Jr. Vitamin A storage in wild quail and its possible significance, 265–271
Notes, 141, 235
Nutrition, quail, 121, 123, 143, 271

Obituaries
Lay, George Balch, 428
Rode, Paul, 234
Odum, Eugene P. Effect of DDT on birds in Georgia pecan orchards with a note on late summer census methods, 415–417

Parasites
eyeworm in pheasants, 304
fungus in beaver lungs, 419
ruffed grouse, 188
Perch, daily migrations of, 40
Pheasants
band returns, 286
censusing, 101
eyeworm, 304
nesting surveys, 274
starvation, 308
Pickerel, chain, growth and development of, 377
Pike, walleye, 157
Placental scars, beavers, 412
Populations
estimating by strip census method, 145
pocket gophers, 311
ruffed grouse, 188

Quail
hatching dates, 231
nutrition, 123, 342
salt requirements, 101
vitamin A, 265
seed acceptance, 143

Rabbit
browsing, 135
cottontail, age determination and bone growth, 216
food habits of, 295
Research Vs. Administration, 237
Reviews, 141, 236, 319, 424, 425, 426, 427
Ricker, W. E. Effects of removal of fins upon the growth and survival of spinyrayed fishes, 29–40
Robbins, Chandler and Robert E. Stewart. Effects of DDT on bird populations of scrub forest, 11–16
Rode, Paul (Obituary), 234

Scanning device, 226
Schuck, Howard A. Problems in calculating size of fish at various ages from proportional measurements of fish and scale sizes, 298–303
Severinghaus, C. W. Tooth development and wear as criteria of age in white-tailed deer, 195–216
Sheldon, William G. A trapping and tagging technique for wild foxes, 309–311
Sheep, bighorn foods, 417
Smith, Arthur D. Effects of mule deer and livestock upon a foothill range in northern Utah, 421, 423
Smith, Justin G. Deep forage observations in Utah, 314–315
Starrett, William C. Book reviews, 141 and 236
Stollberg, Bruce P. Competition of American coots and shoal-water ducks for food, 423–424
Stewart, Robert E., see Robbins, Chandler S., 11
Stroud, Richard H. Growth of Norris Reservoir walleye during the first twelve years of impoundment, 157–177
Swanson, G. A. Book reviews, 426 and 427

Taber, Richard D. A new marker for game birds, 228–231
Thompson, Donald R. and Cyril Kabat. Hatching dates of quail in Wisconsin, 231–233
Thompson, W. K. Observations of moose courting behavior, 313
Predation of antelope, 313–314
Tooth development, in white-tailed deer, 195

Trump, Richard F. and G. O. Hendrickson. Negative aerial photographs, 227–228
Turkey, wild, foods of, 255

Underhill, A. H. Studies on the development, growth, and maturity of the chain pickerel, *Esox niger* Lesueur, 377–391

Van Den Akker, John B. and Vanez T. Wilson. Twenty years of bird banding at Bear River Migratory Bird Refuge, Utah, 359–376
Vaughan, Tim M. A report on rechecking certain Idaho streams in the area treated for tussock moth, 316
Vitamins
in wildlife foods, 271
storage in quail, 265

Walleye, growth of, 157
Waterfowl, mortality, 183
Wilson, Vanez T., see Van Den Akker, John B., 359
Wildlife research, further needs for, 333
Wildlife Society, The, officers, committees, and membership list, v
reports, 321–332

Yeager, Lee E. Book review, 425
Yeager, Lee E., see Hunter, Gilbert N., 392